Evaluation of Total and Free Testosterone Levels and Clinical Signs of Hypogonadism in male patients with Type 2 Diabetes

Abstract

Background and Objective:

Diabetes mellitus is a common metabolic disease. Its association with low level of testosterone has already been shown in many studies. Considering the role of testosterone hormone in impotency, fatigue, and bone mass deficiency this study aimed to evaluate the total and free Testosterone levels and clinical signs of Hypogonadism in male patients with type 2 diabetes.

Methods: Sixty-five diabetic male patients aged 35-70 years were randomly selected and obtained personal consent, enrolled to the study. The relevant questionnaire, such as patient demographics, BMI, past medical history, drug history, history of smoking, education level, employment, and etc were completed. Then, the patients were evaluated for total and Free testosterone levels and symptoms related to decreased testosterone, hypogonadism symptoms by ADAM questionnaire. Finally, the data were obtained and statistical analysis was performed.

Results: The mean age of patients was 57.12 ± 4.7 years with age range of 38-69 years. According to the ADAM questionnaire, 51 (78.4%) of the patients were positive and 14 (21.6%) were negative. 16 (24.6%) of the 65 patients had hypogonadism. Among ADAM patients, 46 (90.1%) had erectile dysfunction, 33 (64.7%) had decreased libido, and 39 (76.4%) had three positive responses to the questions. Most people (75%) had BMI Hypogonadism of more than 30%. There was a significant relationship between BMI of patients and hypogonadism.

Conclusion: Testosterone levels are commonly found low in diabetic men, most of whom have symptoms of hypogonadism. Body mass index is known as an independent risk factor for hypogonadism in T2D men. There was also a significant correlation between free testosterone levels and hypogonadism.

Keywords: Testosterone, Hypogonadism, Men, Diabetes